

INTEGRITY BIOFUELS

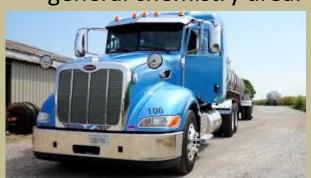
Biodiesel End Uses
John Whittington

Basic Terms

- **Biodiesel** is the pure, or 100%, biodiesel fuel it is typically called B100 or neat biodiesel
- •A blend of biodiesel and petroleum diesel is designated as a Bxx where the xx indicates the amount of biodiesel as a percentage.
- •Injection Blending- Typically computerized equipment is used to pump biodiesel into a flowing line of petroleum diesel yielding a finished blend.
- •Splash Blending- Adding biodiesel to a static tank of petroleum diesel.

End Uses of Biodiesel

- •The majority of the biodiesel produced in the U.S. is blended with petroleum diesel and burnt in standard diesel engines, with a wide range of Bxx blends.
- •There are some uses for biodiesel in the general chemistry area.











Bio-heat is a relatively new market in which biodiesel is excelling in displacing home heating oils!

Performance

Average Density and Heating Value of Biodiesel and Diesel Fuel			
Fuel	• •		% Difference vs. No.2 Diesel Avg.
No. 2 Diesel	0.85	129,500	
Biodiesel (B100)	0.88	118,296	8.65
B20 Blend (B20)	0.856	127,259	1.73
B 2 Blend (B2)	0.851	129,276	0.17

http://www.biodiesel.org/pdf_files/fuelfactsheets/BTU_Content _Final_Oct2005.pdf

OEM Recommendations

- •Many manufacturers of diesel powered equipment and diesel engines have done extensive testing of their products being used with biodiesel blends. Below is a very abbreviated list of big names that endorsed the use of biodiesel blends. The full list can be found at http://www.biodiesel.org/using-biodiesel/oem-information/oem-statement-summary-chart
- •BMW-B5
- •Case IH- B5 to B100 in some models
- •Cat- B5 to B20
- •Chrysler- B5 to B20
- •Cummins- B20
- Detroit Diesel- B5 to B20
- •Ford-B20
- •GM-B20
- •John Deere- B20
- •Kenworth-B5
- Volvo Trucks- B20

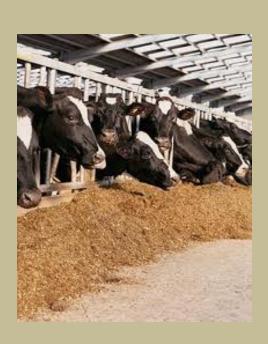
End Uses of Glycerin

Food- Glycerin and its derivatives can be used in many ways as a sweetener.

Feed- Glycerin can be used as a feed additive for cattle which adds nutritional value and decreases the dust generated.

Chemical- Many different applications from pharmaceutical to soap contain glycerin.







Questions/Comments



